Summary of Vaccine Preventable Diseases reported to the Michigan Department of Community Health, 2002

This report summarizes reported cases of selected vaccine-preventable diseases in Michigan in 2002. Totals for 2001 are given for comparison in Table 1, below.

Congenital Rubella - No cases of congenital rubella were reported in 2002.

Diphtheria - No cases of diphtheria were reported in 2002.

***Haemophilus influenzae* invasive disease** - Eighteen cases of invasive disease due to *H. influenzae* were reported, ranging in age from 5 months 86 years. Seven cases occurred in children under 5 years of age. Of these, two were determined to be due to serotype b (the other 3 were due to non-b serotypes): a 13 month-old with no history of receiving Hib vaccine, and a 3 year old who had received 3 doses of Hib vaccine.

Measles - No cases of measles were reported in Michigan in 2002.

Mumps - Seven cases of mumps were reported in Michigan in 2002, 2 more than reported in 2001. Cases ranged in age from 11 months to 42 years, (median age 25 years); five were 21 years of age or older. Six of the seven cases were confirmed serologically. One case, a 14 year-old male, had a documented history of receiving 2 doses of MMR vaccine, and another (25 years old) had received mumps vaccine but written documentation was unavailable. The remaining cases either had not received vaccine or did not know their immunization history.

Pertussis - Sixty two cases of pertussis were reported in 2002, a 58% decrease from the 149 cases reported in 2001. Males predominated slightly (57%). Cases ranged in age from 11 days to 87 years, with a median age of 6.5 years; the age distribution was bimodal, with peaks in those under 6 months of age and over 20 years (see table below).

Age group	# of cases	% of total
0 - 6 months	19	31
7 - 12 months	4	6
1 - 4 years	2	3
5 - 9 years	10	16
10 - 19 years	11	18
20+ years	16	26
Total	62	100

Cases were reported from 21 counties and from all 8 reporting regions of the state. No large outbreaks were reported; there were 8 clusters of cases consisting of between 2 and 5 cases linked epidemiologically.

Diagnosis was confirmed by laboratory testing in 25 cases (40%) of cases; 21 of these were confirmed by culture and 4 by polymerase chain reaction (PCR) assay. In addition, 2 other cases were considered confirmed status on the basis of epidemiologic linkage to laboratory-confirmed cases.

Overall, information on immunization history was available for 49 (78%) of cases. Of these, 25 (51%) had a history of receiving an age-appropriate number of pertussis vaccination doses. Pertussis vaccine is licensed for use in children aged 2 months to 7 years.

Of 14 cases reported in children 3 months - 7 years of age, just 2 (14%) had a history of receiving and age-appropriate number of vaccination doses; these potentially represent cases that might have been prevented if all age-appropriate vaccine doses had been administered according to the recommended routine childhood immunization schedule.

Data on duration of cough was available for 59 cases: the median cough duration was 33 days (range7 to 106 days). Paroxysmal coughing was reported in 54 (87%) cases; post-tussive vomiting was reported in 44 (71%) cases, whoop was reported in 38 (61.3%) cases, and apnea was reported in 26 (41.9) cases.

Overall, 20 (32%) cases were hospitalized; among infant cases under 6 months of age 84% were hospitalized. Pneumonia confirmed by chest x-ray was reported in 7 cases.

There was 1 reported pertussis death in 2002. The case was a 2 **2** week old infant (too young to have received the first dose of the primary vaccine series). The likely source of the case=s infection was a 17 year old uncle who resided in the home and who had a recent history of a protracted cough illness. Very young infants are especially susceptible to severe pertussis disease. Even with antibiotic treatment and intensive specific and supportive therapy, the disease can prove overwhelming to such young babies, with the clinical course often involving severe respiratory insufficiency due to primary pertussis pneumonia, possible secondary bacterial and/or viral pneumonia, and pulmonary hypertension.

Rubella - A single case of rubella was reported in 2002, a 38 year old male, which was serologically confirmed. The source of the case=s infection was not identified. No cases of rubella had been reported in Michigan since 1998.

Tetanus - Two cases of tetanus were reported in Michigan in 2002. Both were adults (ages 26 and 67 years), and followed an acute puncture- or laceration-wound. Both cases resulted in hospitalization.

Varicella - Surveillance for varicella in Michigan consists of school- and day-care-based weekly aggregate count case reports. In 2002, 5,352 cases were reported, representing a 20% decrease from the 6,698 reported in 2001, and continues the declining trend in varicella incidence observed since 1995, when varicella vaccine was licensed for use in the US.

Table 1 - Number of reported cases of vaccine preventable diseases,
Michigan, 2002 and 2001

Disease	Total Cases 2002	Total Cases 2001	Cases < 5y.o. 2002	Cases < 5y.o. 2001
Congenital Rubella	0	0	0	0
Diphtheria	0	1	0	0
H. influenzae invasive	18	14	7	1
Hepatitis B	327	618	2	7
Measles	0	0	0	0
Mumps	7	5	1	1
Pertussis	62	149	25	88
Poliomyelitis	0	0	0	0
Rubella	1	0	0	0
Tetanus	2	0	0	0